Sealift

MAGAZINE OF THE MILITARY SEALIFT COMMAND

November 1978

Much To Be Thankful For

Words are but tools we use when seeking to communicate an idea. Like the tools we use manually, some are simple, some complex. Some are easily understood while others have several different meanings, or shades of meaning. That sometimes hampers communication.

The term "Thanksgiving" is a deceptively simple word. Literally it is a combined word which means the "giving of thanks." But, the meaning each of us assigns the word Thanksgiving differs as do our experiences.

For early American settlers Thanksgiving described an important community event, the meeting of colonialists not merely to give thanks for blessings received in a new land but often to celebrate their very survival.

At some point, American Indians, people whose homeland we had settled, joined with the colonialists to celebrate Thanksgiving. Such meetings illustrated one aspect of Thanksgiving, that each of us, no matter how different our ideas and our culture, can work and live with one another in peace.

Originally Thanksgiving was predominantly a social experience, people coming together to warm themselves before the eternal flame of comradeship. That association in itself had strong spiritual or religious connotations and Thanksgiving soon became an essentially religious celebration—a means of thanking God for our survival in a new land and the benefits we enjoyed.

Unfortunately, as so often has been the case, the ritual and the trappings associated with Thanksgiving became more important than the spirit of the holiday. It has not, of course, happened all at once.

Thanksgiving celebrations initially were centered about the community. As simple communities expanded and our lives became more complex and people less interdependent, the focus of Thanksgiving remained on the family. It was a time for reunion, for renewing and strengthening family ties.

But, as families became more mobile and family members scattered to distant states and even distant lands, the traditional meaning of Thanksgiving seems to have been changed, diluted if you will. Too often it is just another holiday, a time for revelry, feasting or some other form of pleasure seeking.

Far be it from me to suggest that we need return to the basics, the old values, the golden age of yesteryear. We live in the 20th century and the problems we have, the challenges we face, the joys we achieve are of our own making. Man is master of his destiny and the avenues we may choose to follow are many. Some lead to success, others to dead ends which require rerouting of our lives lest we succumb to despair.

Some travelers on life's roadways are more fortunate than others, by virtue of our birth, our early associations with others, abilities we have inherited or acquired and even luck itself. Blessings come in many forms, good health, family relationships, a happy marriage, children of our own, a job we enjoy, and a future that sustains hope and offers promise.

Thanksgiving 1978 offers us an opportunity, a time to count our blessings and to rejoice in the good fortune life has brought. It is also a time for compassion, for lending a helping hand, for doing what we can to advance mutual goals. Brotherhood, understanding, good will, peace, these are only a few of a long list of objectives common to our individual hopes and dreams—for ourselves, for our children, for our fellow man.

As I noted when I began this message, words are often inadequate tools to convey an idea. But, short of our deeds they are the best means we have. Thus, when I express my wish that each of you reap the greatest possible self satisfaction this Thanksgiving, I do so not simply because it is the traditional thing to do but because I firmly believe that each of us has much to be thankful for, and I hope that we shall continue to reap benefits from our investments in both our own lives and those of our fellow man.

Commander, Military Sealift Command

COVER: USNS Rigel is a winner because of the men who operate it. See page 4.

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Rigel Named Top Navy Unit

By Louis Panarale

As usual, there will be plenty of turkey and trimmings for men aboard Navy ships in the Mediterranean for the coming Thanksgiving and Christmas holidays.

They can count on it since the stores ship delivering the goods is USNS Rigel, an MSC ship with a reputation for fulfilling its commitments.

That reputation has earned the Rigel an award as the Navy's outstanding transportation unit, an award given by the National Defense Transportation Assn. Rigel, a refrigerated stores ship, is manned by a combined Civil Service and Navy crew—all members of the command.

Master of the Rigel is Capt. Manuel G. Vieira who proudly stepped upon the stage on Oct. 2 during the national convention of the NDTA in Washington, D.C. to receive the award.

"I accept this award on behalf of all the officers and crew of the Rigel. We will keep the colors of the Rigel flying high," Vieira told NDTA audience.

Rigel is the only Navy resupply cargo ship supporting the Sixth Fleet in the Mediterranean and is the only stores ship in the MSC operated

Crewmen take up slack in a line between Rigel and USS Neosho.

"We really have a good reputation in the Sixth Fleet."

Naval Fleet Auxiliary Force of 21 fleet support ships.

Vieira told the many who congratulated him that he could not be more proud of the men of the Rigel. "They have always done an outstanding job and they deserve the award."

Vieira is no more proud of his crew than are Rear Adm. John D. Johnson and Capt. Herman Fritzke, the commanders of MSC and MSC, Atlantic. They had high praise not only for Vieira himself, both calling him an outstanding leader and ship master, but also for the Civil Service crew and the military department aboard Rigel. "The cooperation of the military-civilian crew, their skills and their dedication are what earned this award," Admiral Johnson said.

Vieira took command of the Rigel when it was assigned to MSC in June 1975.

Rigel has never failed to meet a commitment. "We really have a good reputation in the Sixth Fleet. Some high ranking Navy people recently asked me how we keep Rigel in such good shape. They wanted to know how many shoreside people we had," Vieira said.

"They were surprised when I told them we didn't have anybody ashore. I explained that we assign a few crewmen to maintain the ship when we are in port."

Vieira said that anyone visiting a port where the Rigel is docked will see men chipping and painting and performing other jobs that help maintain the appearance the crew thinks their ship deserves.

But Vieira quickly pointed out that Rigel is more than a smart looking ship. It is a performer, thanks to the men who make things happen.

Vieira has led the Rigel crew to many outstanding accomplishments such as transferring 466 pallet loads of equipment and supplies to the carrier USS Nimitz in 2½ hours. And Vieira reported that there have been many other unpublicized accomplishments.

"These guys put in many hours and put out a lot of effort to get the job done successfully," Vieira said.

He tries to persuade exceptional officers and crewmen to stay on the Rigel rather than rotating among ships in the MSC fleet. "I have been pretty lucky in keeping a group of very good men," he said.

"They have few complaints. I think they really have pride in their hearts and constantly strive to do a good job for MSC."

There are certain qualities he looks for in the men who want to join the Rigel crew. "A man should be reliable, sober, punctual, and most important of all he should have good common sense," he said.

"For example, if I remind a crewman he must observe a safety regulation, I hope he not only follows the regulation but also sees the reason for it."

Vieira said the Rigel has an effective mix of men in different age groups. "We have quite a few men in their mid-forties. They are often the best workers. They may not have the strength of the younger fellows but

they know from experience how to do the job. They don't waste a lot of energy doing something the wrong way."

On the other hand, Vieira said, a young man coming aboard a ship for the first time often learns more quickly than a veteran seaman who has spent most of his time on other types of ships.

"The older follow may have a lot of experience but he may also be set in his ways. He may be rigid on how he thinks something should be done," Vieira said.

At the time Vieira received the NDTA award, Rigel was in overhaul in Tampa, Fla. The ship is scheduled to head for Norfolk after the overhaul to load stores and to resume fleet support operations with the Sixth Fleet.

"We will keep our commitments. We always have," Vieira said.

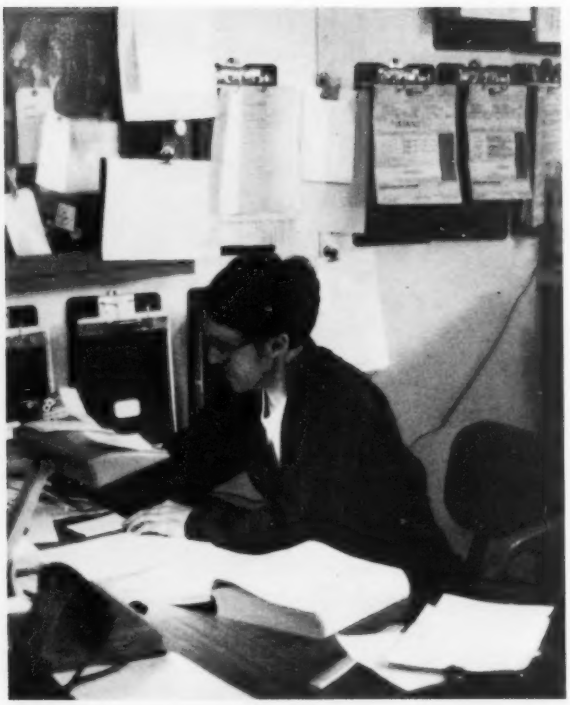
The NDTA is a national association whose members represent the entire Defense transportation industry, including military transportation officials, representatives of the commercial trucking, air, rail, pipeline and maritime industries, and many other organizations who have an interest in transportation. Chapters are active in many U.S. communities and overseas.

Each year the NDTA honors the outstanding transportation unit of the Army, Navy, Marine Corps, Air Force and Coast Guard. To win this year's award, Rigel competed against all other Navy units with the selection made by top Navy logistics and transportation officials.

Previous MSC winners of the prestigious NDTA award are the USNS Taluga and USNS Greenville Victory. The former ship, an oiler, won for its pioneering role in fleet support activities while Greenville Victory earned its award for outstanding performance in evacuation of refugees from South Vietnam prior to the fall of that country. Several members of the cargo ship's crew also volunteered to assist in recapture of the Mayaguez from Cambodian hands, boarding the ship with U.S. marines to get the engines started and the ship under way. No other Navy organization has won the NDTA award three times.

Rigel is not only keeping a winning tradition alive but aiming toward a second NDTA outstanding unit award. ⚓

"These guys put in many hours and put out a lot of effort to get the job done."



Chief engineer Roald Jaegersen is a veteran of the Columbia and a diesel expert.

Pride Runs High On USNS Columbia

By Capt. M. J. Sullivan

"She is a gem all right," said Jeffrey Havlicek, the second mate of the USNS Columbia, one of four Columbia Class tankers operated for the Military Sealift Command by Cove Shipping Inc., of New York. Jeff, a 1975 graduate of New York State Maritime college, is serving his second one-year tour in the ship and is well qualified to pass judgment. He is one of a growing number of seagoing professionals who have found this ship to their liking and have by their own choice returned aboard.

Launched in 1971 as the largest diesel powered ship in the American merchant marine, Columbia has been described by many people in many terms. Not all have been complimentary but there are reasons for the variety of opinions, just as there are reasons for differing opinions on almost any other subject.

USNS Columbia incorporated many technological advances when she went into service which meant that some practices typical in other tankers just weren't applicable. To begin with she has diesel engines for main propulsion rather than steam turbines. Five deep-well cargo pumps are located on the main deck instead of in a pump room below decks. Automated cargo valves, an automated galley, cafeteria style feeding, a reduced manning scale and some entirely new ratings for unlicensed crew members also help account for the variety of opinions.

Close harmony between management and labor was evident in the innovations and cooperative effort which have culminated in a workable ship. The accent, however, is on work aboard the MSC controlled tanker and anyone looking for a leisurely cruise is well advised to steer clear of Columbia.

Despite technological improvements, success of ship operations still depends on the ability and attitude of individuals aboard Columbia.

Every voyage reflects the ship's capabilities and the expertise and pride each member of the crew puts into his work. In the past, with much larger crews, it was possible to "carry" a less than ambitious or unknowledgeable crew member. Not so today, for each individual's work performance is very evident to everyone on board.

In Columbia, we have 25 crewmen who probably are representative of most ships in that they have a variety of backgrounds. They hail from different areas and range in age from the teens to the sixties. Together they operate Columbia.

The youngest man aboard is 18-year-old Deck-Engine Utilityman John W. Rogalski who is making his first sea voyage. John, from Philadelphia, when asked why he took up the sea as a profession, replied, "I have several friends in the merchant marine and they spoke so highly of it that it sounded like a good deal to me. So here I am."

John's job requires that he work in both the deck and engine departments. The rating itself is comparatively new. There are no ordinary seamen or wipers aboard Columbia as in the older ships. John's plans include advancement to a higher rating.

By far the saltiest man aboard is Boatswain Burton A. Owen. Sixty-

seven years of age and a seaman since 1930 he has seen many changes in shipboard living conditions. "One of the things I like about this ship is the comfortable quarters. They are as nice as I have ever had aboard any ship." Boatswain Owen compared his quarters with those aboard his first ship, 47 years ago. "Here we each have a spacious room. On that one we lived seven men to one room. And we ate our meals seated on a long wooden bench instead of in a nice messroom."

He admits, however, that the short runs between ports are tough, such as a recent one when Columbia loaded at four Gulf ports and discharged in three ports. "That type of run is not one that I would like a steady diet of. I prefer an offshore run, or a long coastwise trip."

Chief Engineer Roald Jaegersen, a Columbia veteran, is aboard for the third time. He joined the ship when she was just a year old and is familiar with many of the early problems, most of which have since been corrected. When he came aboard six years ago, most American marine engineers were short on diesel experience because there were so few diesel equipped ships in the U.S. fleet. He has seen many engineers leave for the relative peace and quiet of the turbine powered ships.

Roald was born in Norway and first went to sea in Norwegian-flag ships where diesels were plentiful. An American citizen for many years, he has devoted most of his life to the sea and his experiences include time on the Great Lakes as well as in construction of the MSC-controlled Sealift class ships at Bath, Maine. The longest period he spent out of the industry was when he served as an MP in the U.S. Army.

Asked if he thought there would be any big improvements in diesel propulsion he replied, "I think by now everyone should be convinced that the biggest improvement that can be made is in the type of engine installed. I'm a strong advocate of the slow speed diesel for large merchant ships. I feel the trend is in that direction."

That the diesel engine is the engine of the future is a belief shared by many seagoing engineers. John Acord, first assistant engineer, is a diesel proponent as are Michael P. Rogers, third assistant, and Hector Mendez, second assistant. Acord said he recognizes that he must invest time in a diesel ship to meet professional requirements. John's last job was as chief engineer aboard the USNS Potomac. He held that post for three years before electing to get involved with diesels.

Both Mike Rogers and Hector Mendez are aboard Columbia for the second time. They share Acord's views and Mike favors diesels "because of the greater opportunities today for employment. Right now, in smaller units such as seagoing tugs, there are a wealth of opportunities. Conversions of existing ships as well as new construction on the Great Lakes also make it fairly easy for a qualified diesel engineer to get a job." Mike lives in Panama City Beach, Fla. and spent his last long vacation building a beautiful new home.

Fred Carter, Jr., of Mobile, Ala. is one of the three QMEDs aboard. QMED (qualified mechanic, deck and engine) is a comparatively new rate and reflects the type of talent needed in modern ships. It replaces the old rating of fireman-watertender or oiler. The new rating and the training needed to get it are, as Fred puts it, "necessary because of the many technological changes which require knowledge previously unnecessary to handle the job." The training, as in Fred's case, is provided at the Harry Lundeberg school, established and run by the Seafarers International Union at Piney Point, Md.

Its major objective is to provide SIU members with the skills necessary to handle the equipment and work aboard modern ships. It also helps members upgrade their skills through additional training and enables them to take advantage of opportunities to advance in their chosen profession. The Harry Lundeberg school is an ideal facility being located on Chesapeake Bay with

training ships moored at piers right on the campus, a highly qualified staff, extensive library, training aids, and excellent living quarters. It is completely geared for training able merchant seamen.

Not all members of the Columbia crew have had the benefit of such formal training. Many have developed their capabilities through shipboard experience or military service. Charles Pafford, an AB or able bodied seaman, was born and raised in Canada. Chuck first went to sea in the Royal Navy. His career actually started on a summer day in 1938 when he boarded a British sloop in Newfoundland which was on a recruiting tour.

He signed up and his tour lasted long enough for him to serve on various naval vessels during World War II. "I just happen to like going to sea and have kept at it," claims Chuck. He has worked on several MSC ships.

Liston Lanier, also an AB and a veteran of World War II, was in the U.S. Navy and badly wounded when his LST was bombed at Sicily. Six months in a military hospital and a Purple Heart were two of the results, plus his love of the sea. His complete

Crewmen who work aboard a diesel powered ship learn to live with the noise.

Despite its technological advancement, hard work makes the Columbia go.

recovery has enabled him to work aboard merchant ships since the late 1940s.

James Walter, also an AB, was raised in a seaman's environment—having been born on Grand Cayman Island. He spent a lot of time under sail, beginning as most Cayman Islanders did in 1939, aboard a trading schooner. Jim and his wife live in Houston in a home filled with mementoes of his visits to various world ports. His hobby is collecting crystal. "My collections are useful and bring back a lot of memories. Collecting mementoes is just one of the pleasures of going to sea."

Jessie Thomas and Anthony Maben are the four-to-eight watch ABs. Jessie spends his vacations restoring cars and motorcycles. He has an encyclopedic knowledge of the different models and enjoys discussing their merits.

Three men from Alabama and an easterner comprise the four-man steward department. James Juzang, the Columbia cook-baker, has been going to sea for 34 years. Asked why he chose to come aboard Columbia, his reply was, "Well, it was time to go back to work and I had heard that these ships offered pretty good jobs." Oliver Oakley, a steward-cook, is the only non-Alabaman in the group.

Virgil Campbell of Andalusia and Ernest Dooms from Mobile are the two steward utility men. While Virgil is content to sail in the stewards department Ernest is equally familiar with the deck department having spent quite a bit of his 10 years at sea in that work. In fact he is going to the Harry Lundeberg school on his next vacation to prepare for an examination for his AB ticket.

Communications watches aboard Columbia follow the same schedules as on other merchant ships. There is only one operator aboard and he splits his eight hours each day into three different watches to cover the necessary schedules. Columbia Radio Officer Phillip A. Almodiel was born on the island of Cebu in the Philippines. After graduation from Cebu Politechnical Institute, where he studied radio, he enlisted in the U.S. Navy. It wasn't long after his enlistment that his ship and others were attacked by Japanese aircraft. Later he was made a Japanese prisoner of war.

After World War II, he spent several years in the Navy before entering the merchant marine. Phil summed up the difference between Columbia and his duties on a regular commercial tanker when he said, "The workload on here is about three times that on a regular commercial run." The Columbia radio officer works a lot of different stations instead of the same ones all the time. Phil loves his work and enjoys traveling all over the world.

The deck officers aboard Columbia represent two state schools and the U.S. Merchant Marine Academy. Bill Vose, the chief mate, is a 1970 graduate of Maine Maritime Acade-

my and recently sat for and received his unlimited masters license. The chief mate of Columbia must hold a masters license and Bill got his just a few days before signing on last March. He, like many of the other officers aboard, studied for his examination at the Marine Engineers' Beneficial Assn.-Associated Maritime Officers District 2 School of Navigation in Brooklyn.

MEBA-AMO District 2 is the union to which the licensed officers aboard Columbia belong. In addition to the courses which Bill took, the union runs a school of marine engineering and a diesel training program. It also offers a variety of courses for all the officers at no cost to them.

Now that he has completed the necessary schooling, Bill intends to work on the home he has under construction in Vermont.

Each licensed officer is entitled to six months vacation annually and Jere White, the Columbia third mate, plans to devote the major part of his next vacation to sailing, his favorite pastime. Jere, a 1972 graduate of the U.S. Merchant Marine Academy at Kings Point, was until recently the yawl coach of the U.S. Naval Academy sailing team. A native of Marblehead, Mass., an area well known in sailing circles, Jere has competed in several big races. His naval academy yawl won the C division first place in the Bermuda race.

Now and then there are incidents which vary greatly from the normal tanker routines and at 10:15 p.m. on May 15, 1978 one was experienced by the Columbia crew. We had passed Cape San Antonio, Cuba abeam to starboard, and were headed for Corpus Christi, Texas, the first of four loading ports. At exactly 10:15 we were contacted on VHF channel 16 by a person aboard an American Bertram 46-foot sports fisherman. He had been adrift for over 40 hours with engine trouble and was running low on provisions. We contacted the Coast Guard rescue unit in Miami and were directed to assist the boat, identified as the Sandy D V.

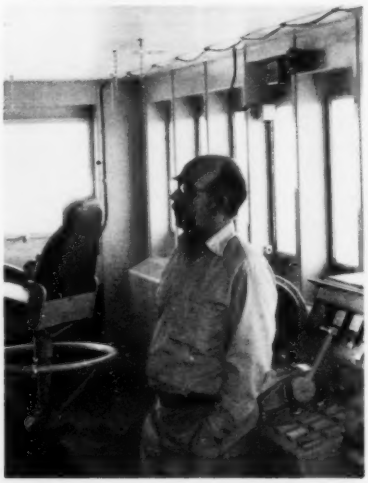
MSC was notified by the Coast Guard that we were enroute and we located the boat after about one hour's steaming when he shot off flares.

Enroute to the Sandy D V, we readied a lifeboat, a crew and provisions. Five minutes after reaching the area, our own boat was alongside the Sandy D V. We gave them provisions and our chief engineer examined their engines. He determined they were in need of a shipyard overhaul and although in no immediate danger they were going to have to be towed.

The Coast Guard, with the approval of MSC, directed us to stand by and await the arrival of a Mexican naval unit which would take Sandy D V under tow. On the 16th, just before darkness, we were informed that the Mexican unit would not show up and we arranged to take the boat under tow at daybreak on the 17th.

At daybreak, we launched another boat. Our third mate made the towing hook up and stayed aboard the disabled craft with its captain. Four persons from the boat were transferred to Columbia where they stayed for the duration of the tow. A Mexican naval unit was supposed to relieve us of the tow but again we were advised that the plan to do so had been cancelled.

Captain Sullivan feels dedication of crew members has made the Columbia an outstanding ship.



We were ordered to tow Sandy D V towards Tortugas where we would be relieved by the Coast Guard cutter Steadfast. The transfer of the tow was made at sunset on May 18th and we put the passengers aboard Steadfast and our third mate returned to Columbia. We again proceeded toward Corpus Christi.

Some of the crew who participated in the operation have since left. Others have taken their places. But all appreciated the opportunity to help someone who needed assistance at sea. That's the tradition of the professional mariner, and the USNS Columbia crew is composed of professionals. ⚓

Capt. M. J. Sullivan, master of the MSC controlled tanker USNS Columbia, is a veteran mariner employed by Cove Shipping, Inc., which operates four Columbia class tankers under contract with MSC. Columbia is one of the few U.S.-flag ships powered by diesel engines. Captain Sullivan authored this story with evident pride in his ship and the Columbia crew.

Capt. Joseph Culbert

Oil and Mississippi River Keep MSC, Gulf Rolling Along

New Orleans, La.—Maritime commerce has always played an important role in New Orleans and it was a major factor considered by Military Sealift Command officials when they established the MSC, Gulf subarea command in October 1949.

From the industrial heart of America spread along the 2,350-mile-long Mississippi River flows a vast amount of shipping that reaches nearly every port of the world.

Half a million measurement tons of Defense Department dry cargo were shipped out of New Orleans in fiscal year 1977. MSC, Gulf personnel also coordinated port calls for 215 tankers which transported 21 million barrels of bulk petroleum products from various Gulf ports to other U.S. and overseas destinations.

Since September 1977, MSC, Gulf has been heavily involved in the Strategic Petroleum Reserve Program aimed toward storing crude oil in Gulf Coast sites for emergency use. Through August, tankers chartered by MSC have delivered 24.3 million barrels of crude oil to three terminals for ultimate injection into three salt domes at West Hackberry, 20 miles southwest of Lake Charles, La.; Bryan Mound, nearly 4 miles from the port of Freeport, Texas, and Bayou Choctaw, 12 miles southwest of Baton Rouge, La.

The MSC representative who works out of Freeport is totally involved in petroleum reserve shipping. Also under MSC, Gulf are two other representatives working out of Beaumont, Texas and covering Port Arthur and Lake Charles, La., and from Houston, Texas covering Galveston, Corpus Christie and Baytown.

Among the 24 naval commands located in the greater New Orleans area, Military Sealift Command ranked second in 1977 in economic impact on the area with expenditures of nearly $20 million in payroll costs and purchase of goods and services.

MSC, Gulf primarily does business with six commercial shipping companies, half headquartered in New Orleans, and the Panama Canal Co.

Two commercial carriers provide container service to North Europe

and the United Kingdom—Sea-Land Service, Inc. and Lykes Bros. Steamship Co. Sea-Land also provides service to the Pacific and Far East using rail delivery to Oakland, Calif. and regularly scheduled West Coast shipping.

Service to the Canal Zone is provided by the canal company's 41-year-old cargo-passenger ship Cristobal, and by Lykes. Puerto Rican service is provided by Sea-Land and the Puerto Rico Maritime Shipping Authority.

MSC, Gulf also uses Seabee and LASH barge ship service. In September 1972, Lykes inaugurated Seabee service to North Europe and the United Kingdom. LASH, or lighter aboard ship, service from the Gulf was initiated by Delta Steamship Lines, Inc., of New Orleans in July 1973 and served the East Coast of South America. In September 1973, Waterman Steamship Corp. launched its first LASH ship and now has three in the Gulf-South Asia-Middle East trade.

Central Gulf Lines, Inc., also of New Orleans, operates six LASH ships in regular service from the Gulf and North Atlantic to the Middle East and Far East via the Suez Canal.

Emma Hyde

Twenty-five years ago when MSC transported troops as well as their equipment the Gulf subarea command had approximately 100 civilian employees and about 30 Navy personnel. The Houston office was the only one operating in the Gulf and it handled mostly tankers. In 1951, MSC passenger ships out of New Orleans transported the 45th Infantry Division to Japan to bolster U.S. defenses in the Far East and lifted the 2nd Armored Division to Europe to reinforce NATO forces.

Today, MSC, Gulf has 29 civilian employees, 3 Navy officers and 3 enlisted personnel. Commander is Capt. Joseph M. Culbert, Jr., an ardent jogger and small boat sailor.

Captain Culbert begins his daily lunch break by jogging around the levees near the MSC offices on the Mississippi River. On weekends he sails his 27-foot cutter on Lake Pontchartrain.

A native of Alabama, Captain Culbert received a B.S. degree from Auburn University in 1953 and entered officer candidate school in November that year. His first assignment was in the Marianas Islands, followed by sea duty aboard the aircraft carrier Intrepid.

While with MSC he has been the commanding officer of the Sasebo, Japan office; assistant chief of staff for MSC, Europe and then was made commander in 1975. Two years later he took command of MSC, Gulf.

The number two man at Gulf is Cmdr. Joshua J. Nelson, chief staff officer, who will retire in December after 25 years in the Navy, nearly 10 with MSC.

Commander Nelson plans to get a merchant mariners license and will seek employment in the maritime field. A man for all seasons, Commander Nelson writes poetry under the pen name of Joshua Sandy, SCUBA dives with his wife Sandy, is state vice president of the National Defense Transportation Assn. (NDTA) and is a member of a three-man task force set up to review worldwide NDTA achievements and recommend a course for the future.

In addition to being MSC, Gulf chief staff officer, he is also operations officer, plans officer and security manager. Another duty is training Reservists who are on active duty at MSC, Gulf on weekends.

On September 20 another responsibility was added—a third child.

Nelson joined the Naval Reserve in 1951 while a student at the University of Houston, was called to active duty in 1952 and commissioned in 1953. He was released in 1956 but recalled to active duty in 1961 at which time he decided to make the Navy a career.

After a brief tour with MSC, Far East in 1961, he was assigned sea duty aboard the heavy cruiser Saint Paul. As weapons officer he was in charge of the big-gun shoots for the movie "In Harms Way" starring John Wayne and Kirk Douglas.

The third member of the front office staff is Emma M. Hyde, another noon-hour jogger who raises orchids and tropical plants in her two greenhouses.

As secretary she handles mail, phone calls, general secretarial duties and makes hotel reservations for visiting persons such as reservists and ship masters. "It's really a delightful job," she says in a soft southern accent.

A native of Mississippi, Mrs. Hyde moved to New Orleans in 1954 when her husband took a job with Kaiser Aluminum. After several government jobs, she joined MSC in 1965. After retirement Mrs. Hyde plans to become a floriculturist and to sell her plants to florists.

The ship operations division is headed by Robert G. Muller, a former merchant mariner who has a degree in geology. He first went to sea in 1947 as a cadet with the Merchant Marine Academy's basic school and sailed on Army Transport Service ships. After getting his third officer's license that year, he was hired by the United Fruit Co. In 1951 he joined the Navy for two years after which he attended Tulane University in New

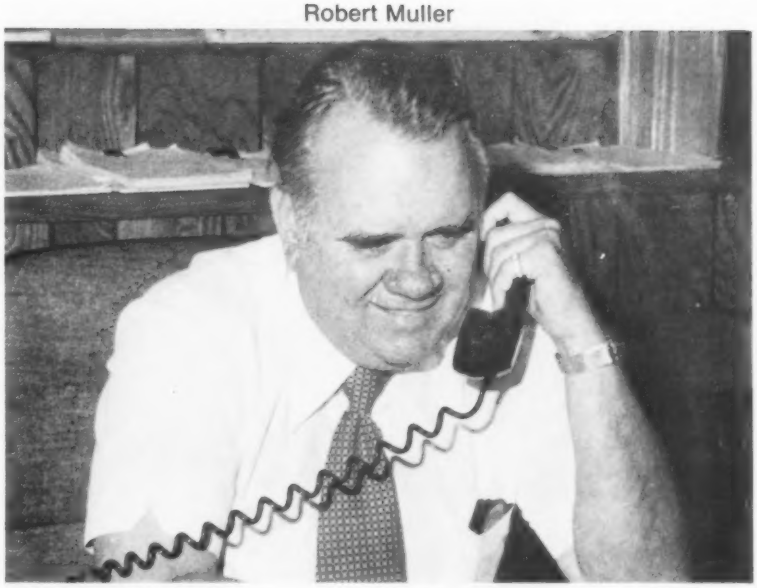
Orleans. After graduation he worked for a year as a "mud engineer."

During the eight years prior to joining MSC he held a shore job with the Gulf and South America Steamship Co.

Ship operations is responsible for getting ships in and out of port. Muller, five marine transportation specialists (three in the field) and a secretary perform a variety of necessary tasks.

Getting ships in and out of port involves a myriad of actions. MSC employees must reserve tugs and pilots for the nucleus ships, order fuel, coordinate requirements of the chartered ships with designated agents, sometimes make suggestions on stowage and loading, and monitor repairs and anything that might delay sailings.

Robert Muller



When tankers call at Gulf ports the office workload increases. Walter (Bud) Rodee, Jr. primarily handles the tankers. "A million things can go wrong," he said. "When everything is going smoothly I keep looking over my shoulder to find out where the inevitable snag will come from."

Rodee said the first thing he does when a tanker is scheduled to take on cargo is "make sure the load is available at the refinery. When a tanker is scheduled to discharge, I make sure space is available to store the oil. When a ship arrives I go to the captain and give him information on loading or discharge operations and the voyage.

"If the ship needs repairs or has problems I make sure the agent is there and doing his job. I also make certain that the refinery gets hooked up to the ship as quickly as possible and see that the QARs (quality assurance representatives) are on hand to assure that no foreign matter is in the oil, and that hoses and ship tanks are clean, dry and free of foreign matter.

"It's never the same for any ship, however. There are different problems, different people."

Rodee is a retired Air Force senior master sergeant who after basic training was immediately sent to fuels school. He spent the next 20 years in petroleum handling. While taking a tanker loading course in Houston in 1973, he met Ben Poston (the MSC representative in Beaumont) and "was impressed with him and his work. I kept that in the back of my mind."

Rodee heard about a job opening at MSC, Gulf through a friend after he had retired and was working as a terminal operations supervisor for General American Transport in Los Angeles. He was hired last July.

Another marine transportation specialist who has spent his working career in and around ships is Fred C. Emde, III, who claims that "the interesting thing about the business is that it's never the same. Always changing."

Emde went to sea in 1932 as a deck boy with Grace Lines out of New York and New Orleans. Just before World War II he attended the Coast Guard's merchant marine officers training school in New London, Conn. and in July 1941 received his third officers' license.

He continued to sail with Grace Lines and made master in 1945. While sailing in the Pacific his ship was hit by a torpedo. "We could see the thing coming. There was nothing we could do. Thank God it was a dud."

Emde went ashore in 1949 and became a stevedore superintendent in New Orleans and Houston until 1968 when he was hired by MSC, Gulf in the operations division. He generally coordinates dry cargo operations.

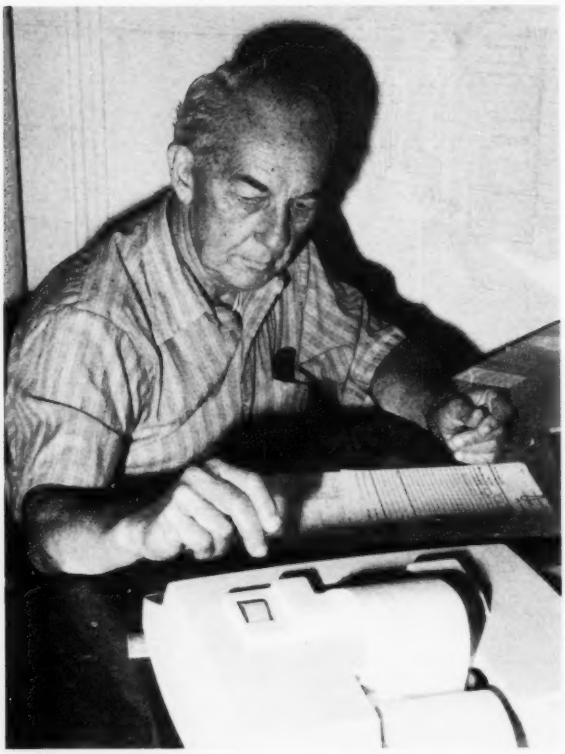
In January 1952 Rita Baker was hired by MSC, Gulf as a keypunch operator in the comptroller's office. Today, she is director of the cargo division.

After becoming a shipment clerk in the cargo division she steadily moved up in the division and was named director in January 1976. The division books Defense cargo on both commercial and MSC controlled ships.

Married for 32 years, Mrs. Baker has a daughter and three grandchildren. In 1974 she was selected MSC woman of the year. A football fan, she especially likes the New Orleans Saints "who hardly ever seem to win."

First Class Yeoman Bernald Moreno keeps the paperwork moving through MSC, Gulf. Born in the Philippines, he enlisted in the U.S. Navy in 1961 as a steward. Moreno was naturalized in 1973. He took the examination for yeoman that year while aboard the destroyer escort USS Sample.

His first assignment as yeoman, however, did not come until 1975 when he joined MSC, Gulf. Moreno



Jay LaBarthe

does most of the reports, keeps reservist records, assists in communications and when the office is shorthanded picks up the mail and acts as the command driver.

Keeping tabs on Gulf finances is Jay LaBarthe, an accounts maintenance clerk who has been with the subarea command for 27 years. During that time he and his wife have reaised five children: two daughters who teach, another daughter who is a college senior, a son with the U.S. Customs Service and the oldest daughter who is communications director at a California school.

Before coming to MSC, LaBarthe worked in the cost accounting department of a company that built landing craft and PT boats. "I learned a bit about ships there," he said.

A native of New Orleans, LaBarthe keeps the MSC, Gulf budget. He plans to retire next year and "perhaps open a fix-it shop and do some woodworking, which is my hobby."

Lester J. Mastio, Sr., a clerk in the administration division, has developed an eye for accuracy and detail during his 28 years with MSC, Gulf.

"Part of the job is scanning letters for misspellings and misprints and I'm used to catching things," he said.

Mastio saw a photograph in Sealift magazine that showed the U.S. flag to the left of the commander's desk that should have been on the right. He let the mistake be known and the flag was moved.

A personal favorite among errors he has discovered was made by a Naval Supply Center. The center had a form printed and distributed with Naval being spelled Navel. For that, some wit called him a "lint picker."

Mastio is custodian of directives, orders office supplies, receives incoming and outgoing mail and orders forms and stationery.

Walter C. Thompson has been counsel for MSC, Gulf for 25 years, a period of time which qualifies him to say, "Now there is nothing new—the extraordinary has become ordinary."

Thompson acts as house counsel giving on-the-spot legal advice, is the claims manager who "attempts bloodless adjustment of differences" and is the coordinator of investigations.

Speaking philosophically, Thompson said, "I try to put things in a framework of eternity, not to take a light view of something, but some people think that if their problem is not solved the world will end. It just isn't so. People sometimes hypnotize themselves."

Also a native of New Orleans, Thompson has always lived within a four-mile radius of his birthplace in Jefferson Parish.

He and his twin brother graduated from Tulane University law school in 1943. Since it was wartime he went directly into the Army Enlisted Reserve Corps which sent him to language school to study Japanese. He spent the war years translating captured documents from Indochina, now Vietnam, Cambodia and Laos.

After the war he worked for a small New Orleans law firm and a governmental rent control agency.

In his leisure time Thompson sails his 31-foot cabin cruiser although he claims most of his spare time is spent working on the boat. "For every hour under way I spend four to five hours working on it." ⚓

Port of Beaumont Specializes In Diversity

Centuries before nature etched the meandering course of the Neches River into the Gulf of Mexico, violent forces were at work deep beneath the ground.

Faults, anticlines and salt domes took shape and became natural reservoirs for crude oil and natural gas that formed later.

When settlers first arrived along the Neches in what is now southeastern Texas, they had no idea what was below the ground. And even if they had known, the oil and gas had no practical application in the early 19th century.

What they did know was that the Neches provided a natural channel to the sea. It was a tempestuous, twisting and capricious river but schooner crews were willing to test their patience and their skills in transporting lumber and cotton down-river to the Gulf.

Today the Port of Beaumont has a $154 million year impact on the city of Beaumont and is one of the major deepwater ports of Texas, standing as living proof that the early settlers were not wrong in trying to tame the Neches.

The Military Sealift Command, Gulf subarea command in New Orleans has a full-time representative at Beaumont. Ben Poston also covers Port Arthur and Lake Charles, La., working mostly with tankers.

Situated 20 air miles inland from the Gulf, the port lies 25 miles west of the Texas-Louisiana border and 87 miles east of Houston.

The Neches has been controlled by reservoirs which impound its flood waters, and has been straightened, widened and deepened to provide a placid ship channel for some of the largest oceangoing vessels such as the 115,000-deadweight-ton tanker Manhattan.

Resources discovered deep in the earth brought a prosperity to the Beaumont area that still exists. Oil fields were developed and spawned giant crude oil refineries which in turn engendered petrochemical plants.

And because industry begets industry, several shipyards, metal forging and steel fabricating plants, oil field equipment and tool manufacturing plants now operate within a 25 mile area of the port. All are

Pipeline equipment destined for Kuate is stacked near a port entrance.

A 173-ton oxygen tank is lifted off a rail car for shipment to Brazil.

important contributors to the steady growth of Beaumont.

The timber industry which first lured the tall-masted schooners up the Neches to Beaumont has continued to thrive. Corporations now plant thousands of acres of tree seedlings in southeast Texas where old southern planters once grew cotton.

Wood products are still one of the port's major exports. Beaumont also is strategically located in the heart of the nation's rice producing belt, making rice another major export commodity.

Facilities at Beaumont include 6,088 linear feet of harbor front. There are 10 ship berths that have wide concrete aprons and a constant minimum water depth of 34 to 40 feet.

A 1,100-foot turning basin with a depth of 40 feet easily accommodates 50,000 ton tankers and large freighters.

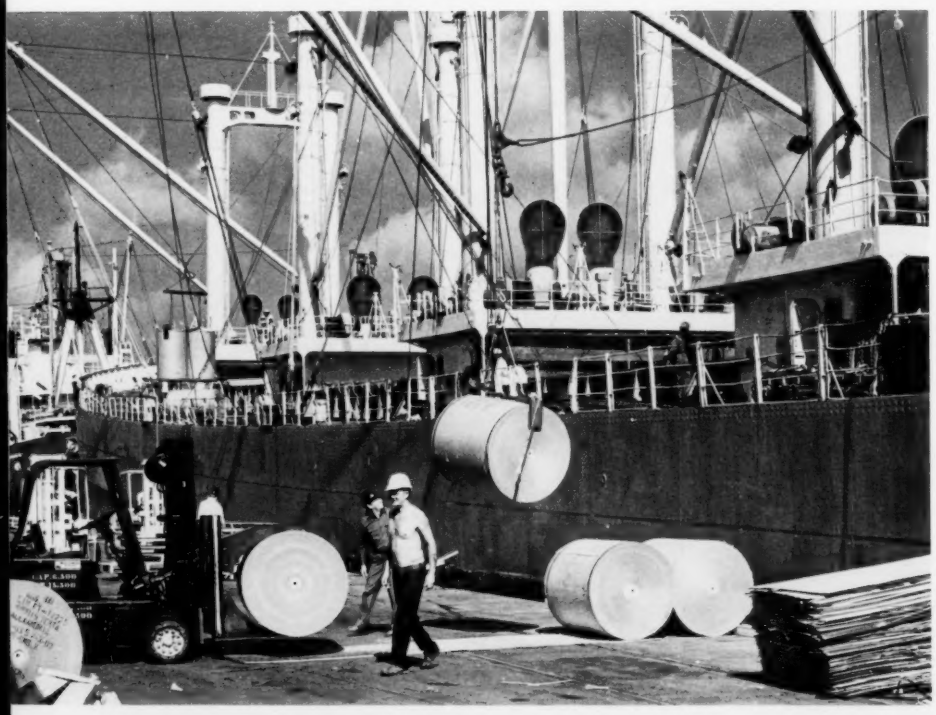
Wharves one, two and three are open berths for cargo not requiring covered shipside storage. Wharves four to seven and the Carroll Street wharf are flanked by spacious transit sheds.

Transit sheds provide nearly 468,300 square feet of space and the port authority owns 290 acres of open storage area.

A two-million-gallon tank terminal available for handling bulk liquids at shipside contributes to the versatility of the port.

The port is served by four major railroads—the Atchison, Topeka and Sante Fe, Kansas City Southern Missouri Pacific and Southern Pacific.

Export cargo is funneled in from a broad mid-continental area westward from the Mississippi and Ohio river valleys to the Pacific. The combined networks of the four rail



A ship's crane lifts rolls of liner board destined for use in Egypt.

lines provide direct rail routes to the port.

The port has 3,400 feet of marginally tracked berths to expedite the transfer of cargo between ships and rail cars. The tracks extend into well-lighted and ventilated wharf sheds which permit day and night operations in all kinds of weather.

The Harbor Island Marine Terminal was completed in late 1976 at a cost exceeding $12 million. The terminal was part of a $16 million expansion program that included a 600-foot shed, 600 feet of open deck, eight acres of hard surface and 25 acres for storage and staging.

Heavy lift capability at the port is provided by Big Bessie, a privately-owned 500-ton capacity floating crane, a 220-ton truck crane and a 60-ton gantry crane. In addition, an 80,000-pound container lifting machine is available.

Big Bessie is the most powerful port crane in Texas and last year proved her value. Twenty reactors, six of which weighed 490 tons each, moved through Beaumont from two ships onto trucks and trains.

It was the largest heavy lift shipment ever moved through a Texas port. Each of the 490-ton pieces required two 600,000-pound capacity, 12-axle, heavy-duty railcars to support them. Only 12 such cars exist in the United States and this was the first time in the history of American railroads that as many as six were assembled for a single movement.

General cargo moving through the port took a dramatic leap forward last year with a 98 per cent increase over 1976. More than 448,000 tons of general cargo was handled last year compared with 226,000 tons in 1976, according to James W. Martin, port director.

A cargo diversification program, increased emphasis on overseas construction project cargoes, completion of the port's Harbor Island Marine Terminal and an upsurge in bagged goods, a traditionally strong item at Beaumont, all contributed to the banner year, Martin said.

Martin credited the Harbor Island terminal for much of the general cargo increase. In 1977 the port attracted more than four times the amount of cargo for overseas construction projects than it shipped in 1976. Martin said the increase was also a positive sign of greater diversification—spurred by the increased cargo capacity afforded by Harbor Island.

Military cargo also played an important role in the diversification of cargo moving through the port.

In late 1977, some 12,000 tons of Army equipment was returned to the United States after NATO maneuvers in Europe and was discharged in a four-day operation. The unloading from the SS Washington marked the first time a commercial port facility was used for any portion of the annual Defense exercise.

The port of Beaumont also was used during Reforger '78. Two ships, the USNS Comet and the William Callaghan, loaded 37,000 measurement tons (one measurement ton equals 40 cubic feet) of Army equipment in August and returned it in October.

Reforger planners also have picked Beaumont for Reforger '79 which will begin in late December. Equipment will be returned to Beaumont in February. Army equipment including vehicles, containers and military vans will be loaded aboard four Military Sealift Com-

Aluminum cable reels weighing 10 tons each await loading for delivery to Zaire.

Port Director James Martin discusses a problem with secretary Barbara Smith.

mand controlled ships, including one from the Ready Reserve Force of the National Defense Reserve Fleet.

Martin pointed out that there is "enough wharf space and railroad tracks to accommodate big military movements behind a security fence. This is an attractive feature for military planners.

"We think the future is bright. Although in the past we specialized in bagged goods, we now think of ourselves as specializing in diversification. This is an all purpose port that can handle anything offered."⚓

The port of Beaumont is the only commercial port that has been selected for the annual Reforger exercise. Two Reforger ships are included in this photo, the USNS Comet (uppermost ship) and Callaghan (black hulled ship below Comet).

Learning to Tame LNG Ship Fires

By Louis Bruchiss

The prevention and control of shipboard fires have always concerned operators and crews of ocean-going vessels. Large tankers pose the greatest problems because of their volatile cargo and the relatively small crews who would have to fight a fire at sea. Liquefied natural gas carriers—LNGs—pose a new and even more potentially disastrous threat. New methods are needed to fight LNG fires.

Liquefied natural gas has been transported by ship from the Middle East and Indonesia for some time. But only recently have the first American LNG vessels been operating, all for the Energy Transportation Corp.

Constructed by General Dynamics, Quincy, Mass., each of the 125,000 cubic meter tankers has five huge spherical, double-hulled containers that hold the liquefied gas. More ships are being built for other U.S. operators.

Meanwhile, the problems of fire prevention and control and safety aboard LNG carriers have been covered in two reports, both sparking controversy between environmentalists and industrial groups.

One report, the Transportation of Liquefied Natural Gas, was prepared by the Office of Technology Assessment for Congress in September 1977. It reviews methods of fire prevention and firefighting on LNG carriers.

The other is a massive three-volume report released in July to Congress by the U.S. Comptroller General. Entitled Liquefied Energy Gases Safety, it reviews methods of promoting LNG tanker safety and discusses a wide range of on-shore and transportation issues.

Energy Transportation Corp. is making certain that all ship crewmen are thoroughly trained in firefighting and control methods. The corporation provides two-day training courses at the Boston Fire Department's fire academy.

Crew members first go through several hours of classroom instruction, handled by instructors from the Ansul Co., manufacturers of shipboard firefighting equipment.

Crewmen are taught to recognize the many different kinds of fires that might start aboard ship and how to use firefighting equipment. They also practice techniques needed to control varied types of fires.

Fire aboard an LNG carrier could start from oil spillage, electrical shorts or human carelessness. Many types of fires can be controlled by conventional carbon dioxide and sea

Some situations call for the use of foam on an LNG fire.

Ship crewmen learn how to recognize and control many types of fires.

During training at Boston, LNG ship crewmen fight gasoline fires.

water systems. But specialized training is needed to fight an LNG fire which might result from leaking valves, ruptured fittings or spills from an engine manifold system.

Pressurized dry chemicals are used in the Ansul equipment which is available in portable and skid-mounted deck units. The skid-mounted units can be operated both directly and by remote control.

For equipment to be effective, however, every crewman must know how to use it for each type of fire.

In a spill fire which might cover areas above and below decks, ship's crewmen are taught to use a wide sweeping motion with the hose nozzle aimed low. If the nozzle is held too high, the fire cannot be extinguished. Hand portable units are usually adequate for these fires.

When a spill fire starts in an area with obstacles such as piping or stanchions, at least two men are needed for immediate control.

Liquefied natural gas has potentially dangerous characteristics not common to other fuels. Since natural gas is liquefied to a very low temperature, contact with the liquid can cause severe skin damage. Touching metal that has been in contact with LNG can cause frostbite.

The vapor from LNG forms a white cloud which can cause suffocation. Crewmen can avoid suffocation by aiming the extinguisher to force the vapor away from themselves.

In a fire with fuel several inches deep, a rapid sweeping motion of nozzles is used. But at the same time, crewmen must be careful not to cause splashes which in turn cause vaporization and further combustion. The nozzle of the extinguisher must be pointed toward the surface of the fuel.

Another type of fire is a gravity-flow fire fed by lube or fuel oil leaks that flow onto the deck. The necessary technique is to sweep horizontally across the fuel on the deck, then to move the nozzle up towards the fuel source while maintaining the horizontal sweeping motion.

One important point that must be observed for any kind of fire is to never turn away from it, even when it appears to be extinguished. It may flash back.

LNG is not pressurized in its holding tanks, so there is no danger of explosion. However, there is enough pressure for cargo control purposes so that a broken valve, a leaking flange, or a break in an instrumentation line can cause a pressure fire.

The technique of fighting an overhead pressure fire is to extinguish the ground fire first, to prevent further ignition. Then hit the flame and move the nozzle up with the flame. Again, a fire fighter should back away from the fire when he thinks he has extinguished it, and never turn his back. The extinguisher should be kept ready in case the fire flares up again.

The tanker men aboard the Energy Transportation Corporation's LNG carriers are all members of the

Seafarers International Union, and most have had basic firefighting training at the Harry Lundeberg School of Seamanship at Piney Point, Md. Their firefighting training at Boston has been recorded in a major motion picture by MRC Films Division of the McLaughlin Research Corp. of New York City. This film covers activities of the crewmen during all phases of the instruction. Videotapes also are available for use in shipboard training.

LNG ship crews also are trained in handling the massive skid-mounted units stationed at strategic points aboard the new ships. These units have their dry chemical contents pressurized with nitrogen, which is stored in large cylinders near the units.

The pressure of the nitrogen within the cylinder is indicated by a gauge. When the cylinder valve is opened, nitrogen passes through the high pressure hose connected to the skid unit to a regulator which allows nitrogen to enter the dry chemical chamber at the desired pressure.

Safety relief valves on the regulator prevent excess pressure of nitrogen from entering the chamber. From the regulator, the nitrogen flows through a low pressure hose and piping into the chamber where it fluidizes the dry chemical. When the nozzle is opened, the dry chemical flows up the pickup tube, through the hose.

The procedures to activate and maintain the permanently mounted ship's firefighting units are described in detail in operation and maintenance manuals which are available aboard the ships.

Use of the skid units is graphically illustrated in the training film. In controlling a large spill fire at the training grounds, the hose is run off the hose reel, reducing possible friction loss of the dry chemical in the rolled-up section. The nozzle is then securely closed and the system activated by an actuator located at the hose reel. During a training demonstration, the unit is pressurized by opening the individual nitrogen cylinder valves in the rack assembly.

Since there is air in the hose at the start, immediately pointing the hose nozzle at the fire would blow air instead of the extinguishing agent into the fire. Result? A bigger blaze. The nozzle must first be pointed upwards, the control valve opened gradually and left open until a good stream of chemical is coming out. Then it must be shut off, and the crew is ready to fight a large spill fire.

As with the smaller fuel-in-depth fires, a sweeping horizontal motion is used. A large fire may require a team of men to put it out. When confronted by any shipboard fire, a crewman must quickly decide on the best way to handle it. Will a hand portable extinguisher do it? Will he need help? Two men with two hoses can put out three times as much fire as a man working alone.

In fighting LNG fires, the direction or drift of the vapor cloud is important. Water can be used to control the vapor cloud because water warms the LNG vapor and warm methane. Being lighter than air, the vapor rises instead of hugging the deck.

For an LNG leak aboard ship, a seawater hose should be used to push the vapor away from any source of ignition since the vapor is combustible. However, during an LNG fire, water should not be used on the fire. Water warms LNG making it vaporize faster and increasing the fire's intensity. Dry chemical should always be used to put out an LNG fire.

Before rewinding the hose onto the reel after a training or actual fire, the hose must be blown clear so that no chemical is left to block the hose. Nitrogen cylinder valves should be closed and the nozzle opened, pointing it up and downwind. It takes about four to six seconds for the chemical to clear the unit.

Both the hand portable or permanently mounted units aboard ship are loaded with chemical extinguisher and ready to go in an emergency. While it is unlikely that these units will need to be recharged aboard LNG carriers. There is ample supply of chemical aboard the vessels and each LNG crewman is taught to operate and recharge the equipment.

Well trained crewmen using modern fire-fighting equipment should be able to control small LNG fires without difficulty. The more complicated fires, however, require the specialized techniques that are part of the training of LNG crews. Whatever the emergency, the equipment and the men must be ready for the potential for disaster is great. ⚓

Trainees use water spray to vaporize dangerous gas.

Black Hole
Mystery in Space

Illustration by Art Mullins

Data from an American-British-European satellite, the International Ultraviolet Explorer (IUE), suggest the possibility of a massive black hole at the center of some groups of stars in our galaxy called globular clusters.

Black holes are believed to be the final stage in the collapse of a massive dying star. The collapsed star's material is so densely packed—even more so than a neutron star—and the gravitational force so great that even light waves are unable to escape from the surface of a black hole.

All external evidence of its presence disappears. Because black holes emit no light or other radiation, their existence—predicted by the laws of relativity—cannot be confirmed by direct observation, but it can be inferred. Astronomers have identified a powerful X-ray source in the constellation Cygnus. Some suspect the source which has been labled Cygnus X-1, may be just such a black hole.

Six clusters, three of them X-ray sources have been the subject of close examination by a group of scientists headed by Dr. Herbert Gursky and Dr. Andrea Dupree, both of the Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

Globular clusters are in effect miniature galaxies, each containing tens of thousands of tightly packed stars. They are found outside the plane of the galactic disk in the surrounding region of space known as the galactic halo. Our galaxy contains at least 150 globular clusters, scattered at random throughout the spherical volume of the halo.

All globular clusters are believed to be very old, nearly as old as the galaxy. According to one theory, the globular clusters were the first stars to appear in the galaxy, but were left outside the disk as the parent cloud from which our galaxy was formed contracted. Since the galaxy is believed to be about 10 billion years old, that must also be the age of the globular clusters.

IUE was launched by the National Aeronautics and Space Administration into a modified synchronous orbit near the equator last January, in cooperation with the European Space Agency and the British Science Research Council. Its purpose was to study a wide range of celestial objects in the ultraviolet, one of the most important regions of the electromagnetic spectrum.

Dr. Gursky said the onboard ultraviolet instrumentation provided surprises for him and his colleagues by being able to penetrate the background denseness of the clusters 15,000 light years away. A light year is the distance light travels in one year, six trillion miles.

What they saw in the core, according to Dr. Gursky, was probably radiation from a group of 10 to 20 bright blue stars that orbit the core. "These stars may well be orbiting a massive black hole the size or mass of one thousand solar systems," he suggests.

However, Gursky emphasized that the existence of a black hole is by no means certain. Dynamics of the stars must be studied to see how they rotate in relation to the center of the million-star cluster. This may give a better indication of what it is that provides the gravitational pull that holds them in orbit.

If the stars are indeed orbiting a massive black hole, Dr. Gursky believes they are right on the edge of it. If not, they may be providing their own gravitational equilibrium.

What surprised the observation team, said Dr. Gursky, was the fact that the short-wavelength instrumentation could so clearly cut through the million-star cluster.

"For the first time we saw in a clean way the center or core of those globular clusters and we were surprised. You can see the clusters in visible light, there are lots of red giant stars there, which mask what is going on in the center. We now have a tool, IUE's shortwave ultraviolet, capable of going right to the core through the whole cluster."

Dr. Gursky said scientists will continue to observe the six globular clusters, which are like miniature galaxies. However, he feels they won't get a definite answer until a NASA space telescope is placed in orbit from the space shuttle in 1983. This telescope will be able to use much more powerful instrumentation, including the short wavelength of the ultraviolet spectrum, to study the blue stars in more detail.

Whether massive black holes are indeed at the center of the clusters is an open question, but astronomers generally agree that the concept of black holes helps them explain puzzling phenomena in the universe that cannot be explained any other way.

For example, how else could one explain the dynamics of the strong X-ray source, Cygnus X-1, a binary star system (two stars that revolve around each other under their mutual gravitation) composed of a visible and invisible companion star? The X-rays are generally interpreted as coming from the system as the result of a companion star, a black hole that is compressing material from the visible star's atmosphere prior to its complete disappearance into the black hole. The Cygnus X-1 black hole was estimated to be 10 times the mass of our Sun, but less than one millionth of its diameter.

Recently, another team composed of Princeton University and University College, London, astronomers announced they had used NASA's Copernicus satellite to find what appears to be a black hole in the constellation Scorpio. Copernicus, managed by NASA's Goddard Space Flight Center in Greenbelt, Md., was launched from Cape Canaveral, Fla., in 1972. ⚓

Photo by Russ Egnor

Capt. Manuel G. Vieira, master of the USNS Rigel, accepts the 1978 National Defense Transportation Assn. outstanding transportation unit award during the 33rd annual NDTA Transportation and Logistics Forum and Exposition in Washington, D.C. Coast Guard Commandant Adm. John B. Hayes (rear) presented the award to Vieira. Rigel is a refrigerated stores ship which supports the Sixth Fleet in the Mediterranean. It is manned by a joint Civil Service-military crew. Story on page 4.

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